Child maltreatment, lifetime trauma, and mental health in Swiss older survivors of enforced child welfare practices: Investigating the mediating role of self-esteem and self-compassion

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Abstract: BACKGROUND: Child maltreatment is a common occurrence and has frequently been shown to adversely impact mental health over the lifespan. Minors affected by welfare practices have a higher risk of exposure to child maltreatment. However, the long-term correlates of child maltreatment in welfare practices and mental health, in addition to potential mediators, are insufficiently examined in later life. OBJECTIVE: This study aims to a) examine the experiences of child maltreatment, lifetime traumata, and mental health of Swiss older adults affected by enforced child welfare practices, in comparison to an age-matched control group; and b) to examine the potentially protective roles of self-esteem and self-compassion. PARTICIPANTS AND SETTING: A total of N = 257 participants (risk group: n = 132, M_{AGE} = 70.8 years, 58 % male; control group: n = 125, M_{AGE} = 70.6 years, 49 % male) were assessed in a retrospective, cross-sectional study involving two face-to-face interviews. METHODS: A structured clinical interview for DSM-5 assessed current and lifetime mental health disorders; self-esteem and self-compassion were assessed with psychometric instruments. RESULTS: Affected individuals (risk group) had higher rates of child maltreatment and lifetime traumata compared to non-affected individuals (control group). Affected individuals also presented with a higher mental health burden over the lifespan. Across both groups, self-esteem, but not self-compassion, acted as a significant mediator between emotional abuse and neglect and mental health. CONCLUSIONS: Findings suggest that child maltreatment has a lifetime impact and influences mental health into later life, and that self-esteem can mitigate the detrimental impact of emotional abuse and neglect on mental health.

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Child maltreatment, lifetime trauma, and mental health in Swiss older survivors of enforced child welfare practices: Investigating the mediating role of self-esteem and self-compassion

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ABSTRACT

Background: Child maltreatment is a common occurrence and has frequently been shown to adversely impact mental health over the lifespan. Minors affected by welfare practices have a higher risk of exposure to child maltreatment. However, the long-term correlates of child maltreatment in welfare practices and mental health, in addition to potential mediators, are insufficiently examined in later life.
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Participants and setting: A total of $N = 257$ participants (risk group: $n = 132$, $M_{AGE} = 70.8$ years, 58 % male; control group: $n = 125$, $M_{AGE} = 70.6$ years, 49 % male) were assessed in a retrospective, cross-sectional study involving two face-to-face interviews.
Methods: A structured clinical interview for DSM-5 assessed current and lifetime mental health disorders; self-esteem and self-compassion were assessed with psychometric instruments.
Results: Affected individuals (risk group) had higher rates of child maltreatment and lifetime traumata compared to non-affected individuals (control group). Affected individuals also presented with a higher mental health burden over the lifespan. Across both groups, self-esteem, but not self-compassion, acted as a significant mediator between emotional abuse and neglect and mental health.
Conclusions: Findings suggest that child maltreatment has a lifetime impact and influences mental health into later life, and that self-esteem can mitigate the detrimental impact of emotional abuse and neglect on mental health.

1. Introduction

Child maltreatment, in the form of emotional, physical, and sexual abuse, and emotional and physical neglect, is a common and global phenomenon (Stoltenborgh, Bakermans-Kranenburg, Alink, & van IJzendoorn, 2015). For instance, in a US household

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population study, more than half of the sample reported at least one type of childhood adversity (Green et al., 2010). Such child maltreatment has repeatedly been linked to a broad range of detrimental mental health outcomes (e.g., Humphreys et al., 2020; Li, D'Arcy, & Meng, 2016; McLaughlin, Conron, Koenen, & Gilman, 2010, 2010; Norman et al., 2012), as well as physical health outcomes (e.g., Draper et al., 2008; Hughes et al., 2017; Wegman & Stetler, 2009). Furthermore, children who grow up in non-familial settings, such as in residential childcare institutions or foster care, appear to have a higher risk of exposure to child maltreatment (e.g., Biehal, 2014; Sherr, Roberts, & Gandhi, 2017). This is particularly true for minors who were affected by child welfare practices within the last century, as these practices often lacked professional supervision, suffered from poor organization and few financial resources, and were often understaffed (e.g., Biehal, 2014; Leuenberger & Seglias, 2008; Sigal, Perry, Rossignol, & Ouimet, 2003; Stein, 2006). In addition, due to a (vastly) different social climate, child rearing, particularly that of children in institutionalized care, was characterized by harsh methods of upbringing (e.g., Ferguson, 2007).

1.1. Short- to long-term detrimental health impacts of child maltreatment

As such, it is of no surprise that child welfare practices have previously been linked to poor psychosocial adjustment, as well as to a broad range of detrimental mental and physical health outcomes (for a detailed review see Carr, Duff, & Craddock, 2018). With regard to mental health, previous studies have shown higher prevalence rates for mental health disorders across the lifespan. In the *short-term,* after exiting foster or residential child care, adolescents and young adults have been shown to present with higher rates of post-traumatic stress disorder (PTSD), major depression, various anxiety disorders (e.g., social phobia, panic disorder, generalized anxiety disorder), and substance dependence disorder (Pecora, Jensen, Romanelli, Jackson, & Ortiz, 2009). In the *mid-term*, i.e., up to middle-age, former recipients of foster or residential childcare were found to have higher psychological distress (Lueger-Schuster et al., 2018; Sigal, Rossignol, & Perry, 1999), more suicidal ideation and attempts (Sigal et al., 2003), and a higher prevalence for various mental health disorders (Lueger-Schuster et al., 2018) in comparison to non-affected individuals (i.e., those who were never a recipient of child welfare practices). Further mid-term outcomes included psychosocial adjustment problems (Carr et al., 2019); clinically significant psychopathological symptomatology; anxiety, mood, sleep, and eating disorders; substance abuse; (complex) PTSD; chronic sexual problems; personality disorders; as well as suicidality (Carr et al., 2010, 2019; Knefel & Lueger-Schuster, 2013; Lueger-Schuster et al., 2014; Wolfe, Francis, & Straatman, 2006). In the *long-term*, the few existing studies, such as those conducted with former indentured child laborers in Switzerland, have shown the presence of PTSD and depressive symptomatology, as well as various anxiety disorders (e.g., Burri, Maercker, Krammer, & Simmen-Janevska, 2013; Kuhlman, Maercker, Bachem, Simmen, & Burri, 2013). However, given that these studies did not include a comparison group, no definitive statements can be made about the long-term correlates of child maltreatment and mental health in later life.

1.2. The importance of considering lifetime traumata and modifiable psychological resources

There exists multiple models and theories of how child maltreatment can increase the risk for the development of mental ill-health, such as the model of *stress sensitization* (e.g., Hammen, Henry, & Daley, 2000; McLaughlin, Canron et al., 2010, 2010), or the *cumulative advantage/disadvantage theory* (Dannefer, 2003). These models and theories broadly share the idea that previously experienced stress (e.g., child abuse, poverty) can increase the vulnerability to future stress experiences. Research has shown that affected individuals have an increased risk for experiencing further potentially traumatic life events across the lifespan (e.g., Widom, Czaja, & Dutton, 2008). For instance, the study by Lueger-Schuster et al. (2018), which examined and compared the same sample of adult survivors of institutional abuse as Weindl, Knefel, Gluck, Tran, and Lueger-Schuster (2018) together with a comparison group, found that survivors generally reported more possible traumatic life events, including (but not limited to) physical assault, assault with a weapon, captivity, and serious injury, harm or death caused to someone else. The possible traumatic life events have the potential to compound and exacerbate the detrimental impact of child maltreatment on mental health. As such, lifetime traumata have to be considered in studies examining mental health-related research questions from a lifespan perspective.

One underlying process for such increased stress vulnerability is through the negative impact of (early-life) stress on psychological resources: Having fewer or less effective psychological resources can render an individual less resilient and more vulnerable towards future stress (and thus increases the risk for mental ill-health). Conversely, having protective psychological resources can potentially counteract this vulnerability and facilitate resilient outcomes. One important protective psychological resource in this process is self-esteem, i.e., the way in which an individual appraises their own self-value. Self-esteem has been shown to be negatively related to child maltreatment in general (e.g., Arslan, 2016; Berber Celik & Odaci, 2020), as well as to child maltreatment experienced in out-of-home or institutional care settings (Weindl et al., 2018; Yoon, Cho, & Yoon, 2019). Furthermore, self-esteem has been linked to fewer stress experiences (e.g., Dumont & Provost, 1999), and a more adaptive regulation of distressing emotional states (Weindl, Knefel, Glück, & Lueger-Schuster, 2020), suggesting a stress-buffering function of self-esteem. Various studies that have examined the mediating impact of self-esteem in the relationship between child maltreatment and psychopathology up to middle adulthood support a mental health protective impact of self-esteem (e.g., Finzi-Dottan & Karu, 2006; Ju & Lee, 2018; Stein, Leslie, & Nyamathi, 2002). However, to the best of the authors' knowledge, no studies have investigated the mediating role of self-esteem in the relationship between child maltreatment (experienced within the context of enforced welfare practices) and mental health in later life.

Another promising psychological resource that has entered the research world relatively recently is self-compassion, i.e., how compassionately or kindly an individual treats themselves in the face of failure or suffering (Neff, Kirkpatrick, & Rude, 2007). Self-compassion has been linked to child maltreatment in general (e.g., Zhang, Liu, & Long, 2020), as well as to child maltreatment in the context of child welfare settings (Tanaka, Wekerle, Schmuck, Paglia-Boak, & MAP Research Team, 2011). Furthermore,

self-compassion has previously been associated with lower levels of psychopathology (e.g., MacBeth & Gumley, 2012; Muris & Petrocchi, 2017), and has been shown to be involved in the mediation of the relationship between child maltreatment and psychopathology (e.g., Wu, Chi, Lin, & Du, 2018), as well as emotional dysregulation (Vettese, Dyer, Li, & Wekerle, 2011). As with self-esteem, self-compassion has not yet been examined in relation to its potential mediating role between (welfare-related) child maltreatment and mental health in later life. Both concepts, i.e., self-esteem and self-compassion, were chosen in the present study due to their potential to be modified and promoted across the life span (e.g., Gothe et al., 2011; Neff & Germer, 2013).

1.3. Relevance of the topic

The study of the long-term impact of child maltreatment on mental health, combined with the examination of potentially protective and modifiable psychological resources and lifetime traumata is of current importance for several reasons. First, given the demographic shift towards an aging society (World Health Organization, 2015), together with a large yet insufficiently understood (mental) health disparity in older age; there is an urgent need to examine mental health-related research questions from a lifespan perspective. Second, such research may help to identify a particularly vulnerable set of individuals with a need for specifically tailored mental health services and interventions. Third, further evidence on the lasting detrimental impact of child maltreatment into old age may help to better inform authorities and facilitate investment into more (effective) resources for child protective policies and practices.

1.4. Aims of the current study

It is therefore the aim of the current study to examine the experiences of child maltreatment, lifetime traumata, and mental health of older Swiss survivors of enforced child welfare practices, in comparison to an age-matched control group. The study further aims to determine the potentially protective influence of self-esteem and self-compassion on the relationship between child maltreatment and mental health. It is expected that affected individuals will report more child maltreatment, lifetime traumata, as well as lifetime and current mental health disorders, in comparison to a control sample. Additionally, it is expected that self-esteem and self-compassion will act as mediators in the relationship between child maltreatment and mental health. This study extends existing literature by comprehensively investigating a unique sample of Swiss older survivors affected by enforced child welfare practices in the last century (Federal Office of Justice, 2020). It further aims to overcome the limitations of previous studies with comparable risk samples. This will be achieved through a number of measures, including the thorough assessment of the types, number, and severity of child maltreatment, as well as lifetime trauma exposure, using standardized psychometric instruments; the documentation of a broad range of lifetime and current DSM-5 mental health disorders using a structured clinical interview; the inclusion of an age-matched control sample in the study protocol; and the examination of the potentially protective roles of self-esteem and self-compassion.

2. Design and methods

The *National Research Program* (NRP) 76 'Welfare and Coercion – Past, Present, and Future' (http://www.nrp76.ch/en) is conducted by the *Swiss National Science Foundation* and was commissioned by the Swiss Federal Council to investigate enforced welfare measures. The aim of the NRP76 is to examine Swiss welfare policies and practices, as well as the impact on affected individuals, from an interdisciplinary perspective. The present study investigates the long-term consequences of compulsory social measures and placements (CSMP) experienced by minors. Data was collected at the University of Zürich (UZH), Switzerland, between July and December 2019. The study protocol is in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the Faculty of Arts and Social Sciences in the UZH (ID: 19.4.3). All participants provided informed consent.

2.1. Participants and recruitment

Inclusion criteria were Swiss language (as native language) and age (50 years and older). An additional inclusion criterion for the risk group was having been affected by CSMP up until the age of 18 years, for a minimum time of one year.

2.1.1. Risk group

Up to 1981, Swiss local authorities had the power to enforce welfare measures to remove minors from their families and place them into care, such as care homes, foster families, or poor houses (Federal Office of Justice, 2020). In many cases, such CSMP were carried out arbitrarily in response to social norm violations by the parents, such as single motherhood, gipsy origin, or extreme poverty (Leuenberger & Seglias, 2008). In the case of socially unacceptable behavior of adolescents and adults (e.g., sexual relationship out of wedlock, being work-shy), this CSMP enabled local authorities to place these individuals into secure institutions, i.e., administrative wards (Swiss Federal Archives, 2020). It is estimated that tens of thousands of individuals were affected by CSMP in the last century (Federal Office of Justice, 2020). In recent years, an increasing number of affected individuals have come forward with reports of severe injustice, extreme forms of child maltreatment, and child labor experienced through these enforced welfare measures (Federal Office of Justice, 2020). Child labor was understood to be an "educational" measure to teach minors how to work hard in order to become an acceptable member of Swiss society. Given the circumstances and treatment of these minors (the so-called *Verdingkinder*), they were also referred to as child slaves (Leuenberger & Seglias, 2008).

The majority of the participants in the risk group were recruited via a contact list provided by the Swiss Federal Office of Justice,

which was compiled during the review of the solidarity contribution for those affected by CSMP. This list identified the individuals who had previously agreed to be contacted for research purposes. A letter was sent to those individuals to inform them about the study. In case of interest, individuals could contact the screening team via the study contact details. Risk group participants were also recruited via word-of-mouth recommendations from participating individuals and by contacting publicly active survivors.

2.1.2. Control group

Recruitment measures for the control group involved the posting of flyers to various public places, as well as places aimed at older citizens (e.g., senior leisure clubs). Individuals from a study pool of the affiliated University Research Priority Program *Dynamics of Healthy Ageing* of the University of Zurich were also contacted and informed about the study.

2.2. Procedure

Interested individuals contacted the study team and were screened for inclusion. If all inclusion criteria were met, two appointments were scheduled (assessments A1 and A2). Both assessments lasted for a maximum of 120 min and were conducted by trained interviewers. Prior to A1, participants received an information package, the informed consent form, and some questionnaires. Upon arrival for A1, the informed consent was signed before beginning the assessment, consisting of a structured clinical interview to assess lifetime and current mental health disorders. At the end of A1, a questionnaire package was given to participants to be completed and returned at A2. The second assessment (A2) collected data on child maltreatment, lifetime traumata and stress, and various psychological resources. In addition, cognitive and functional information was assessed with screening tests and behavioral tasks. At the end of A2, all participants were reimbursed with 240.- Swiss Francs (approximately $250) and were provided with a list of contact points for crisis intervention and psychological counselling. The procedures for the risk and control groups were identical, with the exception that at A1, the risk group was additionally assessed about their CSMP experiences. For a more extensive description of the procedure see Thoma, Bernays, Eising, Pfluger, and Rohner (2020).

2.3. Measures

2.3.1. Socio-demographics and CSMP-related information

Socio-demographics were assessed with a self-report questionnaire. CSMP-related information was assessed with a semi-structured survey created by the study authors. Questions included information on age when CSMP was first initiated; type, reason, duration, and contextual information of experienced CSMP; and subjective perceptions of CSMP experiences.

2.3.2. Child maltreatment

Child maltreatment was assessed with the German version of the *Childhood Trauma Questionnaire* (CTQ; Bernstein & Fink, 1998; Gast, Rodewald, Benecke, & Driessen, 2001). The CTQ measures child abuse and neglect with 28 items rated on a five-point Likert scale (1=“never” to 5=“very often”). The CTQ assesses five types of child maltreatment: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Potential scores range from 5 to 25, with higher values indicating more exposure to child maltreatment. For the analyses, the mean of each maltreatment type, the number of different types of maltreatment experienced (1–5), and the severity of each maltreatment type was calculated (according to Bernstein & Fink, 1998). The German version of the CTQ has been validated in a representative sample of the German population, including individuals of older age (Klinitzke, Romppel, Häuser, Brähler, & Glaesmer, 2012). In the current study, the CTQ showed high internal consistency across the subscales, with the following Cronbach’s alphas: emotional abuse ($\alpha = .83$), physical abuse ($\alpha = .83$), sexual abuse ($\alpha = .96$), emotional neglect ($\alpha = .88$), and physical neglect ($\alpha = .78$).

2.3.3. Potentially traumatic experiences

Lifetime traumata were assessed with a list of potentially traumatic experiences from the German structured clinical interview for diagnosing mental health disorders (DIPS; Margraf, Cwik, Pflug, & Schneider, 2017; Margraf, Cwik, Suppiger, & Schneider, 2017). Participants indicated (yes/no) whether they experienced any of the 18 traumatic experiences (e.g., physical attack in adulthood, natural disasters). For the analyses, the mean number of lifetime traumata, as well as each of the 18 traumatic experiences were compared between groups.

2.3.4. Mental health disorders

Lifetime and current mental health disorders were assessed with a shortened version of the German DIPS (Margraf, Cwik, Pflug et al., 2017; Margraf, Cwik, Suppiger et al., 2017). In addition, a screening assessment was conducted for psychotic symptoms. A mental health index, representing the number of diagnoses (current and lifetime combined, excluding psychotic symptoms), was used as an indicator for mental health. The mental health index ranges from 0 to 40, with higher values indicating more mental health disorders.

2.3.5. Psychological resources

2.3.5.1. Self-esteem. Self-esteem was assessed with the revised German version of the *Rosenberg Self-Esteem Scale* (RSES; von Collani &

Herzberg, 2003). The RSES is composed of 10 items rated on a four-point Likert scale (0="strongly disagree" to 3="strongly agree"). Potential scores range from 0 to 30, with higher values indicating higher self-esteem. The RSES has been validated with older individuals (von Collani & Herzberg, 2003). In the current study, the RSES showed high internal consistency, with a Cronbach's alpha of $\alpha = .86$.

2.3.5.2. Self-compassion. Self-compassion was assessed with the short-form German version of the *Self-Compassion Scale* (SCS-SF; Hupfeld & Ruffieux, 2011; Raes, Pommier, Neff, & Van Gucht, 2011). The SCS-SF is composed of 12 items rated on a five-point Likert scale (1="almost never" to 5="almost always"). A total self-compassion score, as well as 6 subscales (self-kindness, self-judgment, common-humanity, isolation, mindfulness, and over-identification) were calculated. Potential scores range from 12 to 60, with higher values indicating higher self-compassion. The German SCS-SF has previously been validated with older individuals (Hupfeld & Ruffieux, 2011). In the current study, the SCS-SF showed high internal consistency for the total score, with a Cronbach's alpha of $\alpha = .84$, and lower to adequate internal consistency across the subscales, with the following Cronbach's alphas: self-kindness ($\alpha = .67$), self-judgment ($\alpha = .79$), common-humanity ($\alpha = .51$), isolation ($\alpha = .74$), mindfulness ($\alpha = .65$), and over-identification ($\alpha = .69$).

2.4. Data analysis

Data analysis was performed using R Studio version 3.6.2. Missing values were imputed with the package "missRanger", which is a multiple imputation technique, using a chaining random forests algorithm (5000 trees). Furthermore, predictive mean matching was applied, which draws real values sampled from data and thus minimized imputation bias. Two-tailed *t*-tests and Pearson's chi-squared tests were used for group comparisons and Fisher's exact test was applied for cell frequencies ≤5. Mediation analyses were conducted by estimating multiple ordinary least squares regression models, as recommended by Preacher and Hayes (2008). First, independent associations were estimated between the CTQ subscales and the mediators of self-esteem and self-compassion (path *a*). Second, the independent effects of the mediators (path *b*) and the direct effects of the CTQ subscales (path *c*') on the mental health index were estimated. Third, using the package "mediation", the indirect effects were calculated with the bootstrapping method (5000 resamples). Indirect effects were considered to be non-significant if the confidence interval included zero. Bias-corrected and accelerated

Table 1
Sample characteristics.

	Total Sample ($N = 257$)	Risk Group ($n = 132$)	Control Group ($n = 125$)	Group Comparison
Age (years, *M* (*SD*), age range = 49–95)	70.72 (11.08)	70.83 (12.30)	70.60 (9.68)	$t(246.86) = 0.163$, $p = .869$
Sex (female): (%)	46.3	41.7	51.2	$X^2 = 1.979$. $p = .159$
Living situation: (%)				$X^2 = 12.795$**
Alone	41.2	43.9	38.4	
With partner	45.9	39.4	52.8	
With other – family	5.4	7.6	3.20	
With other – not family	1.9	3.0	0.8	
Care home	1.9	3.8	0	
Other	3.5	2.3	4.8	
Relationship status: (%)				$X^2 = 7.450$. $p = .189$
Single	12.5	12.9	12	
In a relationship	11.3	12.1	10.4	
Married	41.2	35.6	47.2	
Separated	1.9	3.0	0.8	
Divorced	20.2	25.0	15.2	
Widowed	12.8	11.4	14.4	
Highest level of education: (%)				$X^2 = 52.43$***
No education	2.3	4.6	0	
Primary school	3.9	6.8	0.8	
Upper secondary school	10.5	16.7	4.0	
Secondary school	2.3	1.5	3.2	
Vocational job training	39.3	43.9	34.4	
Higher professional training	14.8	13.6	16.0	
University-level	21.8	6.8	37.6	
Other	5.1	6.1	4.0	
Income (per month) class: (%)				$X^2 = 18.783$***
<2,001 CHF	16.8	24.3	8.8	
2,001–3,330 CHF	19.8	22.7	16.8	
3,301–4,670 CHF	16.7	18.2	15.2	
>4,670 CHF	46.7	34.8	59.2	
Employment status: (%)				$X^2 = 4.363$, $p = .359$
Employed	22.9	22.0	23.5	
Unemployed	2.9	2.8	3.4	
Retired-pension	61.6	65.9	57.1	
Voluntary work	12.6	9.3	16.0	

Note. *M* = mean; *SD* = standard deviation; X^2 = Pearson's X^2-test deviation; *t* = two-sided t-tests comparing risk group values with control group values; *p* = p-value; ** $p < .05$; *** $p < .001$.

confidence intervals were also computed to account for the tendency of indirect effects to show a skewed parameter distribution (Shrout & Bolger, 2002). In all mediation models, age and gender were included as covariates. Additional meditation analyses were performed, which included the number of traumata, level of education, and income class as covariates. These results are presented in the supplementary material (see Supplementary Table B). As an indicator of effect size, adjusted R^2-measures were reported for baseline and full mediation models (which differ in relation to the inclusion of the mediator).

3. Results

3.1. Demographics

Initially, a total of 260 participants were recruited. In the risk group (RG), three participants dropped out after A1 due to contact- or health-related problems. Thus, the final sample included $N = 257$ participants (mean age = 70.72 years, $SD = 11.08$), with $n = 132$ in the RG and $n = 125$ in the control group (CG). The groups were comparable with regard to age, gender, relationship, and employment status; but differed ($p < .05$) with respect to living situation, education, and income (see Table 1 for sample characteristics).

Individuals in the RG spent an average of 11.7 years ($SD = 6.1$, *range* = 0–25 years) in a CSMP-related context and were initially exposed to CSMP at an average age of 4.7 years ($SD = 4.86$, *range* = 0–19 years). Reported reasons for CSMP included parental financial problems, divorce, or arbitrariness of public authorities. The most frequent type of CSMP was the placement of minors in a foster home or family (77.3 %). In addition, more than one third (36.4 %) of the RG was placed in foster families where the minors had to work for their living. These so-called Verdingkinder worked an average of eight hours per day ($SD = 5.01$, *range* = 0−20 h). The time during CSMP was experienced as rather negative, with a mean of 3.6 ($SD = 2.05$, *range* = 1–8) on a scale from 0 “very negative” to 10 “very positive”.

3.2. Group differences in maltreatment and trauma

3.2.1. Group differences in type, severity, and number of types of child maltreatment

Table 2 summarizes the types of child maltreatment for the total group and separately for the RG and CG. Group comparisons indicate significant group differences for all types of child maltreatment, with higher rates in the RG across all types (physical abuse: RG: 73.5 %, CG: 23.2 %; sexual abuse: RG: 58.4 %, CG: 28.8 %; emotional abuse: RG: 81.1 %, CG: 49.6 %; physical neglect: RG: 90.9 %, CG: 44 %; emotional neglect: RG: 98.4 %, CG 72.8 %). The biggest mean differences (MD) were observed for physical neglect ($MD = 7.22$), and emotional neglect ($MD = 6.62$).

Table 3 summarizes the severity of each type of child maltreatment for the RG and CG. Across all child maltreatment types, the RG reported more “severe to extreme” severities of child maltreatment than the CG. Across all types of child maltreatment, more than a third of the individuals in the RG reported severe to extreme child maltreatment.

Table 4 summarizes the combined number of child maltreatment types experienced in the RG and CG. Each child maltreatment type was considered as present if the level “low to moderate” or higher was indicated (according to Bernstein & Fink, 1998). Groups differed significantly regarding the number of child maltreatment types experienced (X^2 (5, $N = 257$) = 71.34, $p < .001$). In the RG, 99.3 % (all except one participant) indicated that they experienced some type of child maltreatment, compared to 85.6 % (all except 18 participants) in the CG. Compared to CG, 23.1 % more participants in the RG reported four types of maltreatment. Similarly, 45.5 % of the RG reported five types of child maltreatment, compared to only 8.8 % in the CG.

3.2.2. Group differences in number and type of traumata

Table 5 depicts the number and type of lifetime traumata experienced in the RG and CG. Groups differed significantly regarding the number of traumata ($t(255) = 4.41$, $p < .001$), with the RG ($M = 6.46$, $SD = 3.19$) reporting more traumata than the CG ($M = 4.70$, $SD = 2.54$). In terms of the types of traumatic events, the groups differed significantly with respect to physical attack in adulthood, childhood physical abuse, other unwanted or uncomfortable childhood sexual experience, occupational accident, assault with a weapon, and captivity.

Table 2
Child maltreatment type and group comparisons.

	Group			Group Comparison	
	Total	Risk Group	Control Group	*t*-tests	*p*
CTQ: *M (SD)*					
Physical abuse	9.43 (4.97)	12.24 (5.13)	6.76 (2.96)	$t(180.31) = 9.96$	***
Sexual abuse	8.54 (5.68)	10.58 (6.71)	6.60 (3.57)	$t(173.27) = 5.65$	***
Emotional abuse	12.22 (5.84)	14.5 (5.56)	10.08 (5.28)	$t(226.65) = 6.18$	***
Physical neglect	11.31 (5.13)	14.95 (4.29)	7.73 (2.91)	$t(200.29) = 14.95$	***
Emotional neglect	16.58 (5.96)	20.09 (4.28)	13.47 (5.49)	$t(220.7) = 10.65$	***

Note. Average responses per child maltreatment type, as measured with the Childhood Trauma Questionnaire (CTQ). Scores range from 5 to 25. *t* = two-sided t-tests; *** $p < .001$.

Table 3
Severity of child maltreatment.

CTQ	Risk Group (%)				Control Group (%)			
	None to minimal	Slight to moderate	Moderate to severe	Severe to extreme	None to minimal	Slight to moderate	Moderate to severe	Severe to extreme
Physical abuse	26.5	10.7	21.9	40.9	76.8	10.4	7.2	5.6
Sexual abuse	41.6	7.6	20.5	30.3	71.2	8	14.4	6.4
Emotional abuse	18.9	23.6	18.9	38.6	50.4	28	3.2	18.4
Physical neglect	9.1	10.6	15.1	65.2	56	24.8	9.6	9.6
Emotional neglect	1.6	17.4	17.4	63.6	27.2	32	15.2	25.6

Note. Numbers illustrate the percentage of the sample that was exposed to a particular type and severity of child maltreatment. CTQ = Childhood Trauma Questionnaire; severity ratings according to Bernstein and Fink (1998).

Table 4
Number of types of child maltreatment per group.

CTQ	Risk Group (n = 132) (%)	Control Group (n = 125) (%)	X^2	p
			71.34	***
No maltreatment	0.7	14.4		
One type of maltreatment	4.4	21.6		
Two types of maltreatment	7.7	22.4		
Three types of maltreatment	11.4	23.2		
Four types of maltreatment	30.3	7.2		
Five types of maltreatment	45.5	8.8		

Note. Numbers indicate the percentage of each group that was exposed to a certain number of child maltreatment types. CTQ = Childhood Trauma Questionnaire. X^2 = Pearson's X^2-test, investigating group differences in the number of trauma types experienced; p = p-value; *** $p < .001$.

Table 5
Lifetime traumata and group comparisons.

Number of traumata (range 1–18)	Risk group (n = 132)	Control group (n = 125)	t	p
	M (SD)	M (SD)		
	6.46 (3.19)	4.70 (2.54)	*4.41*	***
Types of traumata	% yes	% yes	X^2	p
Physical attack in adulthood	42.42	24.80	8.40	**
Physical abuse in childhood	81.06	40	45.11	***
Sexual violence in adulthood	21.21	12	3.37	.066
Other unwanted or uncomfortable sexual experience in childhood	53.78	32.80	11.04	***
Natural disaster	15.15	15.20	0.01	1
Fire or explosion	29.54	19.20	3.30	.069
Transportation accident	28.03	19.20	2.41	.121
Occupational accident	16.66	4.80	8.13	**
Serious accident	31.81	26.40	0.81	.369
Assault with a weapon	28.03	12.80	8.57	**
Combat or exposure to a war-zone	12.12	12	0	1
Captivity	16.66	2.40	13.45	***
Life-threatening illness or injury	48.48	46.40	0.07	.788
Severe human suffering	57.57	63.20	0.64	.422
Serious injury, harm, or death caused to someone else	44.69	42.40	0.09	.765
Serious injury or harm to someone close	30.30	24.0	0.99	.726
Sudden accidental death	42.42	37.60	0.51	.476
Professional exposure to cruel details	14.39	14.40	0.01	1
Other	15.90	30.4	2.77	.096

Note. Numbers indicate mean number of reported trauma and percentage of each group that was exposed to a certain type of trauma, according to structured clinical interview for diagnosing mental health disorders (DIPS). Yate's continuity correction was used for Pearson's X^2-test, investigating group differences in trauma types; t = two-sided t-tests; p = p-value; ** $p < .05$; *** $p < .001$.

3.3. Group differences in current and lifetime mental health disorders

Table 6 depicts the prevalence rates for current and lifetime DSM-5 mental health disorders in the RG and CG. Fig. 1 shows the rates of the most common mental health disorders. Across both groups, 46.7 % of the participants presented with a current mental health disorder (RG: 56.8 %; CG 36 %); 80.5 % presented with a lifetime mental health disorder (RG: 84.1 %; CG 76.8 %); and 18.3 % reported never having experienced one of the assessed mental health disorders (RG: 15.9 %; CG 20.8 %). The most common disorders in the RG were lifetime major depression (RG: 38.9 %; CG: 31.2 %), lifetime PTSD (RG: 25.4 %; CG: 12.8 %), and lifetime dysthymia (RG: 20.6 %; CG: 13.61 %). Significant group differences were found for anxiety disorders (i.e., current separation anxiety and generalized phobia, current and lifetime agoraphobia, and lifetime specific phobia), trauma and stress related disorders (i.e., current and lifetime PTSD), somatic stress disorders (i.e., current somatic disorder), disorders related to psychotropic substance and dependent behaviors (i.e., current and lifetime smoking), as well as current psychotic symptoms (i.e., delusions). The majority of mental health disorders were more prevalent in the RG, except for lifetime hypochondria, generalized phobia, compulsive thoughts, alcohol consumption disorders, drugs, and sleep-wake disorders.

3.4. Group differences in self-esteem and self-compassion

Table 7 depicts the values for self-esteem and self-compassion in the RG and CG. A significant group difference ($p = .012$) was found for self-esteem (RG: $M = 21.26$, $SD = 5.41$; CG: $M = 22.89$, $SD = 4.96$). Regarding self-compassion, a significant group difference ($p = .011$) was found for the self-kindness subscale (RG: $M = 6.36$, $SD = 1.34$; CG: $M = 5.94$, $SD = 1.34$). Groups did not significantly differ in the other self-compassion subscales, nor in the total score.

3.5. Mediation by self-esteem and self-compassion

3.5.1. Mediation by self-esteem

A series of mediation models were conducted to investigate whether self-esteem acted as a mediator of the relationship between

Table 6
Mental health disorders (diagnosis) and group comparisons.

Diagnosis, *n* (%)	Group				Group comparison			
	Risk Group		Control group		Current		Lifetime	
	Current	Lifetime	Current	Lifetime	X^2	*p*	X^2	*p*
Anxiety disorders								
Separation anxiety	19 (14.39)	20 (15.15)	6 (4.54)	10 (7.57)	7.221	**	2.367	.082
Panic disorder, panic attacks	5 (3.81)	17 (13.01)	3 (2.40)	7 (5.61)	0.400	.074	1.832	.175
Agoraphobia	12 (9.20)	13 (9.90)	3 (2.41)	3 (2.41)	4.131	**	4.953	**
Social phobia	12 (9.20)	18 (13.70)	10 (8.01)	14 (11.20)	0.026	.870	0.222	.636
Specific phobia	17 (13.01)	18 (13.70)	12 (9.60)	6 (4.81)	0.365	.545	4.589	**
Generalized phobia	18 (13.71)	12 (9.20)	4 (3.21)	12 (9.70)	7.205	***	0.058	.808
Bipolar disorders								
Bipolar disorder	1 (0.80)	3 (2.30)	0	2 (1.60)	0.957	.511[a]	0.157	.799[a]
Depressive disorders								
Dysthymia	11 (8.40)	27 (20.60)	7 (5.61)	17 (13.61)	0.440	.506	1.869	.171
Major depression	9 (6.90)	51 (38.90)	6 (4.80)	39 (31.20)	0.474	.490	0.852	.355
Obsessive-compulsive disorders								
Compulsive thoughts	3 (2.30)	2 (1.50)	0	2 (1.60)	2.894	.247[a]	0.001	.703[a]
Compulsive actions	4 (3.10)	5 (3.81)	2 (1.60)	1 (0.80)	0.589	.684[a]	1.371	.241[a]
Trauma and stress related disorders								
Posttraumatic stress disorder	15 (11.51)	33 (25.40)	5 (4.01)	16 (12.81)	3.665	**	7.594	**
Acute stress disorder	0	0	0	0				
Somatic stress disorders								
Somatic disorder	13 (10.01)	13 (10.01)	5 (4.01)	9 (7.20)	7.763	**	0.399	.527
Hypochondria	1 (0.80)	0	1 (0.80)	2 (1.60)	0.002	1[a]	2.176	230
Sleep-wake disorders								
Insomnia	18 (14.01)	17 (13.20)	16 (12.80)	18 (14.60)	0.054	.703	.002	.594
Hypersomnia	1 (0.80)	0	4 (3.20)	5 (4.01)	1.891	169[a]	3.301	.069[a]
Disorders related to psychotropic substance and dependent behaviours								
Alcohol consumption disorders	0	2 (1.60)	0	2 (1.60)			0.001	.1[a]
Smoking	39 (30.51)	80 (62.51)	9 (7.21)	58 (46.40)	21.737	***	5.063	**
Drugs	1 (0.81)	6 (4.81)	1 (0.81)	4 (3.21)	0.001	1[a]	0.095	.748[a]
Psychotic symptoms								
Hallucinations	16 (12.50)		10 (8.01)		0.943	.331		
Hearing voices	7 (5.50)		1 (0.80)		4.501	.066[a]		
Delusions	20 (15.61)		9 (7.20)		4.423	**		
Disordered speech	9 (7.01)		4 (3.20)		1.904	.254		

Note. X^2 = Pearson's X^2-test; [a] Fisher's exact test; *p* = p-value; **$p < .05$; ***$p < .001$.

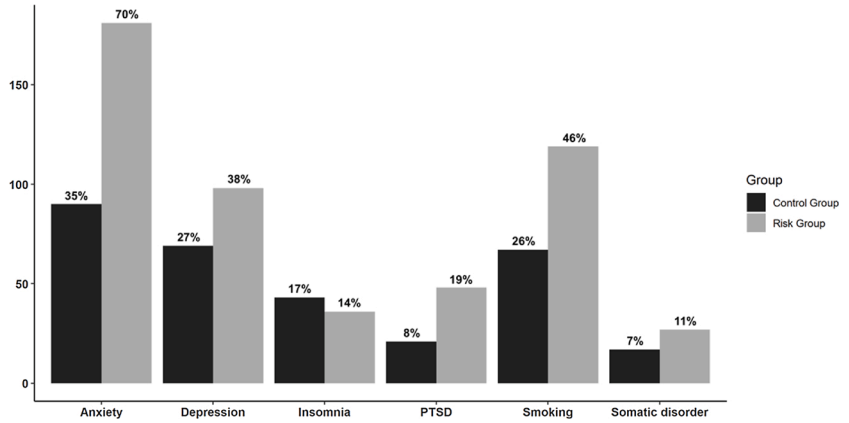

Fig. 1. Rates of mental health disorders for both groups.
Rates of mental health disorders, as assessed with the DIPS for both groups. Numbers indicate the percentage of each group in relation to the total sample. As concomitant diagnoses (i.e., current and lifetime) were present, numbers may exceed group sample sizes.

Table 7
Self-esteem, self-compassion, and group comparisons.

	Risk Group *M* (SD)	Control Group *M* (SD)	Group comparison *p*
Self-esteem	21.26 (5.41)	22.89 (4.96)	$t(2.51)$, $p = .012$**
Self-compassion			
Self-kindness	6.36 (1.34)	5.94 (1.34)	$t(2.55)$, $p = .011$**
Self-judgment	5.77 (1.48)	5.78 (1.37)	$t(0.06)$, $p = .951$
Common humanity	6.04 (1.86)	6.31 (1.75)	$t(1.21)$, $p = .225$
Isolation	5.28 (2.04)	4.8 (1.98)	$t(1.91)$, $p = .056$
Mindfulness	4.97 (2.15)	4.59 (2.13)	$t(1.41)$, $p = .157$
Over-identified	6.71 (1.54)	6.95 (1.54)	$t(1.24)$, $p = .214$
Total score	35.62 (2.93)	35.33 (2.52)	$t(0.86)$, $p = .389$

Note. Self-esteem was assessed with the revised German version of the Rosenberg Self-Esteem Scale (RSES); self-compassion was assessed with the Self-Compassion Scale Short-Form (SCS-SF); t = two-sided t-tests comparing the risk group with the control group; p = p-value; **$p < .05$.

child maltreatment and mental health, as indexed with the number of mental health disorders (see Supplementary Table A for bivariate correlations). In all reported mediation models, age and gender were included as covariates. Across both groups, significant positive total effects were initially observed for all CTQ subscales ($p < .001$), suggesting that higher exposure to child maltreatment was associated with a higher number of mental health disorders. In addition, negative relationships were found between self-esteem and mental health for all CTQ subscales, suggesting that higher self-esteem was associated with a lower number of mental health disorders ($p < .001$; path *b*). The relationship between child maltreatment and self-esteem was significant for the subscales 'emotional abuse' and 'emotional neglect', indicating a negative association with self-esteem ($p < .05$; path *a*).

With respect to the mediator self-esteem, significant indirect effects were observed across both groups for the CTQ subscales 'emotional abuse' ($b = 0.02$; 95 % BCa CI [0.01, 0.05]) and 'emotional neglect' ($b = 0.03$; 95 % BCa CI [0.01, 0.06]). The direct effects remained significant after including the mediator self-esteem ($p < .001$), which suggests a partial mediation by self-esteem on the relationship between emotional abuse and emotional neglect and mental health. Including self-esteem as a mediator in the models explained 8.6 % more variance in mental health in the mediation with emotional abuse ($R^2 = 0.398$), and 6.2 % more variance in the mediation with emotional neglect ($R^2 = 0.374$). The non-standardized estimates of the mediation models are shown in Table 8. Fig. 2 illustrates the mediation models for the mediator self-esteem.

Self-esteem as a mediator was also examined separately for each group. In the RG, no significant indirect effects were observed for any CTQ subscale, suggesting that self-esteem was not a significant mediator in the RG. Significant direct effects were found for the CTQ subscales 'emotional abuse' ($b = 0.12$, $p = .046$) and 'emotional neglect' ($b = 0.12$, $p = .041$). This suggests that the more emotional abuse or neglect experienced, the higher the number of mental health disorders. As in the analysis across groups, the relationship between self-esteem and mental health was significant for all CTQ subscales ($p < .001$; path *b*), suggesting that higher self-esteem was associated with a lower number of mental health disorders.

In the CG, significant indirect effects were observed for the CTQ subscales 'emotional abuse' ($b = 0.05$; 95 % BCa CI [0.01, 0.10]), 'sexual abuse' ($b = 0.05$; 95 % BCa CI [0.01, 0.12]), and 'physical abuse' ($b = 0.06$; 95 % BCa CI [0.01, 0.14]), while direct effects remained significant. This indicates a partial mediation and suggests that within the CG, self-esteem acts as a significant mediator of the relationships between these CTQ subscales and mental health. Including self-esteem as a mediator in the models explained 5.4 % more variance in mental health in the mediation with emotional abuse ($R^2 = 0.369$), 8.5 % more variance in the mediation with sexual

Table 8
Mediation models of self-esteem on the association between child maltreatment and mental health.

Mediator Self-esteem	Path *a*		Path *b*		Path *c'*		Path *ab*			Adjusted R^2	
	β(SE)	*p*	*β*(SE)	*p*	*β*(SE)	*p*	*β*	*p*	95 % BCa CI	(1)	(2)
Total Sample											
Predictors for child maltreatment											
Emotional abuse	−0.12 (0.05)	**	−0.20 (0.03)	***	0.16 (0.03)	***	0.02	**	[0.01, 0.05]	.312	.398
Emotional neglect	−0.16 (0.05)	***	−0.19 (0.03)	***	0.12 (0.03)	***	0.03	***	[0.01 0.06]	.312	.374
Sexual abuse	−0.06 (0.05)	.275	−0.22 (0.03)	***	0.11 (0.03)	***	0.01	.272	[−0.01, 0.04]	.041	.363
Physical abuse	−0.09 (0.06)	.151	−0.22 (0.03)	***	0.14 (0.03)	***	0.02	.148	[−0.01, 0.05]	.284	.373
Physical neglect	−0.09 (0.06)	.136	−0.22 (0.03)	***	0.13 (0.03)	***	0.02	.120	[−0.01, 0.05]	.278	.373
Risk Group											
Emotional abuse	0.08 (0.09)	.380	−0.21 (0.05)	***	0.12 (0.05)	**	−0.01	.390	[−0.06, 0.02]	.186	.370
Emotional neglect	−0.12 (0.12)	.307	−0.21 (0.05)	***	0.12 (0.05)	**	0.02	.313	[−0.02, 0.08]	.318	.370
Sexual abuse	0.04 (0.07)	.540	−0.21 (0.05)	***	0.06 (0.04)	.202	−0.01	.521	[−0.05, 0.02]	.272	.352
Physical abuse	0.12 (0.10)	.228	−0.20 (0.05)	***	0.05 (0.06)	.359	−0.02	.192	[−0.08, 0.02]	.275	.349
Physical neglect	0.17 (0.11)	.142	−0.21 (0.05)	***	0.12 (0.07)	.090	−0.03	.162	[−0.09, 0.02]	.280	.360
Control Group											
Emotional abuse	−0.27 (0.08)	***	−0.16 (0.05)	***	0.17 (0.04)	***	0.05	***	[0.01, 0.10]	.315	.369
Emotional neglect	−0.11 (0.07)	.142	−0.20 (0.05)	***	0.11 (0.04)	***	0.02	.140	[−0.01, 0.06]	.226	.318
Sexual abuse	−0.24 (0.11)	**	−0.20 (0.05)	***	0.15 (0.06)	**	0.05	**	[0.01 0.12]	.236	.321
Physical abuse	−0.31 (0.13)	**	−0.19 (0.05)	***	0.24 (0.07)	***	0.06	**	[0.01, 0.14]	.270	.347
Physical neglect	−0.24 (0.14)	.091	−0.23 (0.05)	***	0.04 (0.08)	.633	0.05	.084	[−0.01, 0.14]	.186	.304

Note. Path *a* = individual effect of each subscale of the Childhood Trauma Questionnaire (CTQ) on the mediator; Path *b*= the effect of the mediator on the mental health index. Path *c'* = direct effect of each CTQ subscale on mental health index. BCa CI = bias-corrected and accelerated confidence intervals. Numbers indicate unstandardized estimates of the mediation models; (1) = Adjusted R^2 for the regression models excluding the mediator self-esteem; (2) = Adjusted R^2 for the regression models including the mediator self-esteem; *β(SE)* = unstandardized estimates and standard errors of the mediation models; *β* = unstandardized estimates of indirect effects; *p* = p -value; $^{**}p < .05$; $^{***}p < .001$.

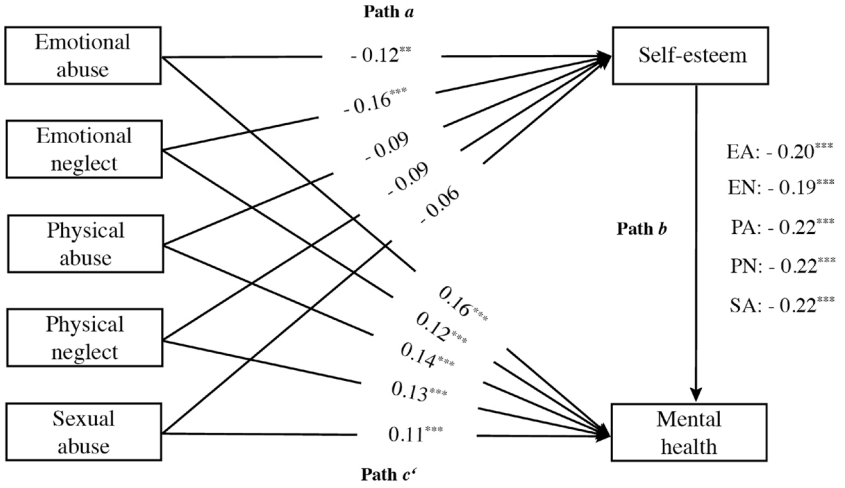

Fig. 2. Illustration of mediation models, including non-standardized estimates.
Illustration of the mediation models across both groups. Numbers represent unstandardized beta coefficients. Path *a* = individual effect of each subscale of the Childhood Trauma Questionnaire (CTQ) on the mediator; Path *b* = the effect of the mediator on the mental health index. Path *c'* = direct effect of each CTQ subscale on mental health index. EA = emotional abuse; EN = emotional neglect; PA = physical abuse; PN = physical neglect; SA = sexual abuse; ** $p < .05$; *** $p < .001$.

abuse ($R^2 = 0.321$), and 7.7 % more variance in the mediation with physical abuse ($R^2 = 0.347$). In contrast to the RG, significant negative relationships were found in the CG between self-esteem and the subscales 'emotional abuse', 'emotional neglect', and 'sexual abuse' ($p < .05$; path *a*); the relationships between self-esteem and mental health were significant for all CTQ subscales ($p < .001$; path *b*), indicating that higher self-esteem was associated with better mental health (i.e., a lower number of mental health disorders).

Further meditation analyses were performed, which included additional covariates: age, gender, number of traumata, level of education, and income class. The inclusion of these additional covariates changed some of the results so that the indirect effects of self-esteem on the relationship between emotional abuse and mental health across both groups was no longer significant ($p = .130$). Furthermore, self-esteem no longer acted as a significant mediator of the realtionship between sexual abuse and mental health in the CG ($p = .090$). See Supplementary Table B for the mediation analyses with the additional covariates.

3.5.2. Mediation by self-compassion

The same analyses were conducted for the mediator 'self-compassion'. No significant effects were found across both groups, or for each group.

4. Discussion

This study aimed to examine the experiences of child maltreatment, lifetime traumata, and mental health in Swiss older adults affected by enforced child welfare practices, in comparison to an age-matched control group. It further aimed to determine the potentially protective roles of self-esteem and self-compassion. Results showed that affected individuals had higher rates of child maltreatment and lifetime traumata, compared to a non-affected control group. Furthermore, affected individuals presented with a higher mental health burden across the lifespan, suggesting a lifetime impact of early-life adversity that even has the potential to reach older age stages. Across both groups, self-esteem, but not self-compassion, acted as a significant mediator in the relationships between emotional abuse and neglect and mental health. In the non-affected control group, self-esteem was found to act as a significant mediator for the relationships between emotional, sexual, and physical abuse and mental health.

Affected individuals reported significantly higher exposure to and severity of child maltreatment. Such group differences were expected and are comparable to previous research on welfare-related child maltreatment. For instance, in an Austrian study of adult survivors of institutional abuse, considerably more than half (68.8 %) reported sexual abuse. This also parallels numbers reported by studies conducted with similar risk samples (e.g., Benedict, Zuravin, Somerfield, & Brandt, 1996; Carr et al., 2019). Despite significant group differences in the current study, experiences of child maltreatment were also high in the control group. In addition to the high prevalence of sexual abuse (29 %), around half of the control sample reported low to extreme emotional abuse (50 %) and physical neglect (44 %), and more than two thirds reported emotional neglect (73 %). These high numbers lend support to the notion that child maltreatment is a common and widespread phenomenon (Stoltenborgh et al., 2015).

The groups in the current study also differed with respect to the lifetime experience of traumata, with an average of 6.5 and 5 traumatic experiences reported by individuals in the risk and control groups, respectively. This is in line with previous research findings of higher levels of potentially traumatic life events in samples with a history of (institutional) child maltreatment (Lueger-Schuster et al., 2018; Widom et al., 2008). As such, individuals affected by enforced child welfare measures appear to have a higher risk for additional stressors and traumata throughout their life, which can compound and exacerbate the detrimental impact of child maltreatment on their mental health. In later life, this can be further compounded by the general age-related health deficits and the higher risk of experiencing losses, such as the loss of social roles due to retirement or the loss of meaningful others through death. As shown in a separate analysis of the same study sample (Thoma et al., 2020), affected individuals reported experiencing a higher stress load and worse physical health compared to non-affected controls. As such, the higher vulnerability of survivors of child maltreatment, coupled with the higher risk for lifetime traumatic experiences, can render these affected individuals at high risk for the development of physical and mental ill-health throughout the lifespan and particularly when entering older age stages (when confronted with age-related stressors). This is an important issue to take note of because of the greater burden and expense on social and health services. Our findings suggest that interventions should target modifiable psychological resources (i.e., self-esteem), focus on the management of lifetime traumata and stressors that can accumulate with age, and take a lifespan perspective to treatment, as this could reduce some of the burden and costs and improve mental health outcomes for older adults.

Furthermore, affected individuals presented with a higher mental health burden across the lifespan, suggesting a lifetime mental health impact of early-life adversity and related consequences. This is indicated by meaningfully higher prevalence rates for various anxiety disorders, PTSD, somatic disorder, smoking, and psychotic symptoms (i.e., delusions). The high(er) rates of mental health disorders in the risk group was expected and corroborates existing literature on comparable, but younger, samples (e.g., Carr et al., 2010, 2019; Lueger-Schuster et al., 2018; Wolfe et al., 2006). Together with existing findings, the results of our study further corroborate the notion that detrimental early-life experiences and their consequences can throw a lifelong shadow over the lives of the affected individuals that can reach into later life.

In contrast to previous investigations (e.g., Carr et al., 2010; Wolfe et al., 2006), the rates of current (0 %) and lifetime (1.6 %) alcohol consumption disorder in the current study were comparably low (e.g., 5 % and 26.5 %, respectively, in the study by Lueger-Schuster et al., 2018). Cultural differences in alcohol consumption, underreporting due to stigma associated with dependency disorders in older generations, or premature death due to chronic alcohol abuse may account for these differences (e.g., Rehm et al., 2007). The high amount of smokers in the risk group is consistent with findings from a recent longitudinal study on young adult survivors of child maltreatment, who were twice as likely to smoke at the age of 21 years and to have been persistent smokers over the previous seven years (Kisely et al., 2020). It may be that for survivors, smoking is a (health risk-related) means of dealing with the emotional stress associated with child maltreatment.

Mediation analyses across both groups revealed that self-esteem acted as a mediator in the relationships between emotional abuse and neglect and mental health. As such, self-esteem appears to be meaningfully involved in the translation of child maltreatment into adult psychopathology (also see Simmen-Janevska, Brandstätter, & Maercker, 2012). Self-esteem may thus constitute a relevant factor that must be considered in the understanding of the mental health disparity in older age. When examining the mediating role of self-esteem separately for the two groups, a differential picture emerges: The relationship between child maltreatment and self-esteem differs quite substantially between the groups. No meaningful relationships were found between child maltreatment and self-esteem in the risk group, which contrasts with findings on Austrian adult survivors of institutional early-life adversity (Weindl et al., 2018). Self-esteem was also not a significant mediator in the risk group. In the control group however, significant negative relationships were found between emotional, sexual, and physical abuse and self-esteem; and self-esteem also acted as a significant mediator between

these types of child abuse and mental health. We can only speculate about the reason for this finding. Child abuse experiences were more severe in the risk group; controls scored mostly in the none-minimal severity category for the three child abuse types. As such, severe abuse experiences might have affected the development of self-esteem in the affected individuals. This is supported by the significantly lower levels of self-esteem in the risk group. Self-esteem was higher and less affected by severe abuse experiences (related to enforced child welfare measures) in the control group. This may be a reason why self-esteem played more of a role in mediating the child maltreatment and mental health relationship in the control group. Further investigations applying longitudinal, group-comparison studies with comparably affected samples are needed to examine this interpretation. From a statistical point of view, such differences in mitigating effects could be addressed in future studies with the use of multigroup structural equation modelling (Bentler, 1995). This technique allows for the selective investigation of which paths vary between groups in one model, bringing further insight to the question of which relationships differ across groups.

In the present study, groups did not differ with respect to self-compassion and no meaningful mediating effects were observed. Thus, the expectation that self-compassion would exert a protective impact on psychopathological development (e.g., Muris & Petrocchi, 2017) was not supported. As such, treating oneself more compassionately may not exert a meaningful buffering impact on the relationship between child maltreatment and mental health in later life, a finding that has previously been reported in younger adult samples (Wu et al., 2018).

The current study extends previous investigations by having included an age-matched control group. As revealed in a recent systematic review (Carr et al., 2018), the inclusion of a control group is not yet common practice, with as few as 28 % of the 46 reviewed studies comparing their findings on survivors with those of a control group. The inclusion of a comparison group is particularly relevant with respect to the long-term impact of child maltreatment on mental health in older adulthood, as these individuals were raised in profoundly different times, particularly with regard to child care ideologies, and moral and social norms (e.g., Ferguson, 2007). This study also adds a novel contribution to the current literature by having examined an older adult sample, with a mean age of 70 years. Given the fact that public health measures have eliminated many causes of early mortality, along with the significant improvements in medical care, there is an increasing number of individuals reaching older age stages of the life span (World Health Organization, 2015). However, while the aging population is steadily growing, there still exists only a rudimentary understanding of aging, particularly with respect to the heterogeneity of health in older age. As such, there is an urgent need to examine such mental health-related research questions from a lifespan perspective.

Some limitations must also be taken into consideration. First, given the historical particularities of the risk sample and the related ethical constraints, a cross-sectional, retrospective design was applied. Therefore, due to a lack of time sequencing, and the potential for memory biases, no definite conclusions can be made about causal inferences and the impact of early traumatic experiences on mental health in later life. Second, the majority of the affected individuals were recruited via a list of persons who had previously claimed the solidarity contribution and who were interested in participating in research activities. It may be that this self-selected sample could differ in characteristics and behavior from those individuals who did not claim the solidarity contribution, or who had no interest in participating in a research study. Third, given the relatively high mean age of the sample, other potential sample biases may exist, such as a selective survival bias due to premature death following child maltreatment, mental health issues, and/or lifetime traumata. Fourth, the groups significantly differed with respect to basic socio-demographic parameters, such as living situation, education, and income; factors that may also interact with or have an influence on the detrimental impact of child maltreatment. Fifth, given the young mean age of initial exposure to CSMP (4.7 years) and the associated limited ability to recollect autobiographical events (e.g., Bauer, 2015), child maltreatment was not assessed separately for institutional and intrafamilial contexts. Future studies should aim to distinguish between differing contexts of child maltreatment. Lastly, given the non-blinded study aim, the research focus may have been of particular interest to control individuals with traumatic experiences. This may be reflected by the PTSD rates in the control group (current: 4.01 %; lifetime: 12.81 %), which are higher than the rates in a nationally representative German sample (one-month PTSD according to ICD-11: 1.1 %; in Maercker, Hecker, Augsburger, & Kliem, 2018), or the rates in a German study with an elderly community sample (one-month PTSD according to DSM-IV: 1.5 %; lifetime 3.1 %; in Spitzer et al., 2008). Nevertheless, the current study found meaningful group differences with respect to child maltreatment, mental health disorders, and self-esteem.

Child maltreatment is a detrimental experience that has the potential to affect mental health across the life span and can reach into later life. With respect to recommendations for child welfare practices, the results of this study emphasize the importance of policy and resource investment to prevent, or at the very least, to minimize future exposure to child maltreatment in welfare contexts. For example, through high levels of independent protective and control measures in institutional childcare settings. The study findings across both samples point toward a protective impact of self-esteem, highlighting a potentially effective avenue for research into protective measures against the long-term impact of child maltreatment. However, single group analyses revealed differences between individuals affected by child welfare practices and non-affected individuals, with regard to the relationship between child maltreatment and self-esteem, as well as the mediation of self-esteem on child maltreatment and mental health. The meaningfully lower, though nevertheless considerably high number of older individuals who presented with current mental health disorders in the control group (36 %), reveals the silent psychopathological burden of this particular age segment. Despite the steadily growing number of older adults worldwide (World Health Organization, 2015), they are still an often neglected population with respect to mental health sevices and interventions (e.g., Kazdin, 2017). We herewith call for increased research and treatment attention to be directed towards older individuals with mental ill-health, and specifically stress the need for tailored mental health care and support services for the current population of older adults affected by enforced child welfare practices, in order to better address the lifetime impact of exposure to child maltreatment.

Declaration of Competing Interest

The authors report no declarations of interest.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.chiabu.2020.104925.

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